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RESEARCH ARTICLE

Deep Mapping and More-Than-Human Geographies: Rethinking Space, Place, and Agency

Andrey Volodin[1*], Irina Andryushenko[1], Ivan Kravchenko[1], Andrey Yakovlev[1]

[1] V.I. Vernadsky Crimean Federal University, Simferopol, Russian Federation

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***Corresponding Author:**

stburah@gmail.com

ABSTRACT

The goal of the study is to explore the connection between deep mapping and more-than-human geographies by examining how these concepts and frameworks enhance our understanding of place, agency, and the ecological and cultural dynamics that shape the world. Deep mapping and more-than-human geographies challenge traditional, human-centric views by emphasizing the interconnected relationships between human and non-human entities in shaping space and place. While deep mapping integrates diverse knowledge and experiences to represent the complexity of a place, more-than-human geographies recognize the agency of non-human actors – such as animals, plants, and technologies – in co-creating and influencing the dynamics of our world. The authors come to the conclusion that both directions of modern scientific knowledge have points of convergence, such as: an appeal to non-human agents, the division of the landscape into a sequence of infranetworks, and the symmetrical influence of natural and cultural factors of spatial dynamics.

INTRODUCTION

Geography, as a discipline, has traditionally focused on the human experience—how humans shape spaces and how spaces shape human lives. However, over recent decades, a growing body of work in human geography has challenged this anthropocentric view, advocating for the inclusion of non-human entities and forces in geographical analysis (Madimarova et al., 2024). This shift has given rise to the concept of "more-than-human geographies", which emphasizes the interconnectedness of humans, animals, plants, environments, and technological systems. These geographies seek to broaden the understanding of space and place beyond human-centered frameworks to include the agency and influence of non-human actors. The term "more-than-human geographies" draws from a range of theoretical perspectives, including posthumanism, actor-network theory (ANT), new materialism, and environmental humanities. The development of this field is largely a response to the anthropocentric legacy of traditional geography, which positioned humans as the dominant force in shaping and experiencing the world (Popov et al., 2017). Scholars in more-than-human

geographies argue that this view limits our understanding of the complex relationships that exist between human and non-human entities (Sarsekova et al., 2023).

The emergence of more-than-human geographies is also tied to increasing environmental concerns, such as climate change, biodiversity loss, and the recognition of the non-human world's agency. Researchers in this field seek to transcend the human-nature divide, understanding the environment not as a backdrop to human activity but as an active participant in shaping social and spatial relations.

1. LITERATURE REVIEW

Several key concepts define more-than-human geographies, each offering a novel approach to understanding spatial relationships:

***Agency of Non-Human Actors**:* One of the central tenets of more-than-human geographies is the recognition of the agency of non-human actors. In this context, agency is not confined to human beings but extends to animals, plants, technologies, and even natural forces like wind and water. These entities are seen as capable of influencing and shaping human actions and environments. For instance, the movement of animals across landscapes can affect the spatial dynamics of ecosystems and human settlement patterns (Whatmore, 2006; Bekezhanov et al., 2023; Rednikova, 2023).

***Relational Ontologies**:* More-than-human geographies often adopt a relational ontology, which focuses on the interconnectedness of all beings, both human and non-human. This approach emphasizes the networks of relationships that constitute places, where the actions and experiences of all actors – human and non-human – are interwoven. In this framework, the world is not a collection of isolated objects but a complex web of relations, where each actor has the potential to influence others (Bennett, 2010; Popov et al., 2017).

***More-than-Human Ethics**:* Another important dimension of more-than-human geographies is the ethical consideration of non-human beings. This includes the moral implications of how humans interact with animals, plants, and the environment. More-than-human geographers often call for a rethinking of human responsibilities toward non-human entities, emphasizing ecological justice and the rights of nature (Whyte, 2018).

***Non-Human Spatial Practices**:* Non-human beings also engage in spatial practices that can be studied in geography. The movements of animals, the spread of plant species, or the behavior of microorganisms all involve forms of spatiality that affect human lives and landscapes. Understanding these spatial practices challenges traditional, human-centered notions of space and opens up new avenues for geographical research (Ingold, 2000; Madimarova et al., 2024).

The implications of more-than-human geographies extend to various fields of study, from environmental policy to urban planning, conservation, and even architecture. Some key applications include:

***Environmental and Climate Justice**:* More-than-human geographies play a crucial role in addressing environmental justice issues, particularly by giving voice to non-human perspectives in discussions of environmental degradation. By considering the impacts of environmental changes on ecosystems and non-human life forms, more-than-human geographers advocate for more inclusive environmental policies that consider the rights of animals, plants, and landscapes (Buell, 2001).

***Conservation and Ecological Research**:* More-than-human geographies are integral to conservation efforts, which require an understanding of how humans and non-human species interact within

specific ecosystems. The concept of "cohabitation" suggests that human activities must be carefully balanced with the needs of non-human life to ensure sustainable coexistence (Haraway, 2016; Sarsekova et al., 2023). For example, research on animal migration patterns or plant species distribution can inform conservation strategies and help mitigate the negative impacts of human development.

***Urban Planning and Architecture**:* Cities, which are often seen as human-centered environments, can benefit from more-than-human perspectives by incorporating non-human agencies in their design. This could involve designing spaces that acknowledge the needs of animals, plants, and other non-human entities. For example, the integration of green spaces and wildlife corridors in urban environments can help maintain biodiversity and improve the ecological health of cities (Amin & Thrift, 2017).

While the rise of more-than-human geographies has been transformative, it is not without its challenges. Critics argue that the field risks anthropomorphizing non-human entities or treating them as subjects in a way that might obscure their true nature. Others point out that more-than-human geographies can sometimes neglect the complex social, political, and economic forces that also shape space and place (Escobar, 2018). Moreover, there are concerns about the practical implications of this approach, especially in policy-making. For instance, how can we incorporate the interests of non-human entities into legislative frameworks that are primarily concerned with human needs? These are ongoing debates within the field of more-than-human geographies.

More-than-human geographies represent a paradigm shift in the way we understand the world. By acknowledging the agency of non-human actors and emphasizing relational ontologies, this approach opens up new ways of thinking about space, place, and the environment. It challenges the anthropocentric assumptions that have traditionally dominated geography and offers a more inclusive, ethical, and sustainable vision of our relationship with the planet and its inhabitants. As the challenges of climate change, biodiversity loss, and ecological degradation continue to grow, more-than-human geographies provide vital tools for reimagining our world in ways that honor the interconnectedness of all life forms.

In the fields of geography, environmental studies, and the humanities, deep mapping and more-than-human geographies have emerged as transformative concepts that challenge traditional, human-centric views of space and place. Both concepts prioritize the relational and interconnected nature of the world, emphasizing the complexity of interactions between human and non-human entities. Deep mapping offers a unique methodological approach for representing these complex relationships, while more-than-human geographies expand our theoretical understanding of space by recognizing the agency of non-human actors. This article explores the connection between deep mapping and more-than-human geographies, examining how these frameworks enhance our understanding of place, agency, and the ecological and cultural dynamics that shape our world.

2. **METHODOLOGY**

Deep mapping is an innovative approach that goes beyond traditional cartography to create rich, layered representations of places. Unlike conventional maps, which typically focus on geographic data such as boundaries, roads, or topography, deep mapping integrates multiple forms of knowledge, including sensory experiences, local histories, cultural stories, and environmental dynamics. Deep maps often draw on diverse media – such as text, audio, video, and interactive technologies – to represent the lived experiences of individuals and communities in specific locations.

The central aim of deep mapping is to capture the complexity and richness of a place. It seeks to map not just the physical attributes of a location but also the social, historical, and environmental forces that shape it. This approach invites participation from a range of stakeholders, from local residents to environmental experts, and may also involve non-human actors – such as animals, plants, and ecosystems – that shape and inhabit the space. Deep mapping, thus, is a dynamic process that acknowledges multiple forms of knowledge and experience in the representation of a place (Baker, 2016).

More-than-human geographies is an emerging field within human geography that challenges traditional anthropocentric perspectives. This framework broadens the understanding of space and place by acknowledging the agency of non-human actors – including animals, plants, landscapes, and even technologies – in shaping our world. Central to more-than-human geographies is the idea that humans are not the only entities that have the capacity to affect and alter the world. Instead, all beings, whether human or non-human, are interconnected and play a role in the co-creation of space. Drawing from posthumanism, new materialism, and environmental humanities, more-than-human geographies argue for the recognition of the active role that non-human entities play in shaping the environment. The traditional separation between humans and nature is dismantled, and the focus shifts toward understanding how various actors—both human and non-human—engage in the formation of places and spaces (Whatmore, 2006). Non-human entities, from trees and rivers to technologies and animals, are seen as participants with agency, actively influencing the dynamics of space and society.

3. RESULTS

While deep mapping and more-than-human geographies are distinct concepts, they are deeply intertwined in their shared commitment to a more inclusive, relational, and holistic understanding of space and place. Both challenge the anthropocentric, reductionist models of geography that have dominated traditional studies of space. The following sections explore how these frameworks complement and enhance one another.

A Relational Understanding of Place: One of the key intersections between deep mapping and more-than-human geographies is their shared emphasis on relationality. More-than-human geographies stress that space and place are not defined solely by human activity but are co-constructed through the interactions of humans, animals, plants, and other non-human entities. In this framework, places are understood as dynamic and fluid networks of relationships, constantly shaped by the actions and influences of all actors involved (Bennett, 2010).

Deep mapping aligns with this relational understanding by depicting places as complex, multi-layered environments. Deep maps represent the multiplicity of forces that come together to shape a location, encompassing human experiences, ecological processes, historical narratives, and cultural practices. For example, a deep map of a forest could include not only the locations of paths and settlements but also the movements of animals, the growth of vegetation, the seasonal changes in the ecosystem, and the cultural significance of the land to indigenous communities. These various layers of meaning and experience are interwoven, reflecting the relationality emphasized in more-than-human geographies.

Challenging Hierarchies of Knowledge and Agency: Both deep mapping and more-than-human geographies challenge hierarchical models of knowledge and agency. Traditional maps often reflect human-centered perspectives, prioritizing scientific or colonial knowledge systems while excluding or marginalizing non-human voices. In contrast, deep mapping provides a more inclusive platform

where various forms of knowledge – including indigenous, local, and ecological – are equally valued. It allows for the inclusion of non-human actors, such as animals, plants, or environmental forces, as active participants in the mapping process.

Similarly, more-than-human geographies reject the idea that humans are the central, dominant actors in shaping space. Instead, they emphasize the agency of non-human entities in shaping environments and social relations. For instance, in an urban context, non-human actors like birds, trees, and even pollutants can influence the design and experience of a city. Deep mapping complements this by recognizing and representing these entities as contributors to the social and environmental fabric of a place (Haraway, 2016).

In a deep map of a river, for example, the map might not only show human activities such as fishing, transportation, and settlement but also represent the river's own agency – the seasonal flooding, the flow of water, and its role in shaping local ecosystems. By mapping these non-human influences, deep mapping aligns with the ontological shift advocated by more-than-human geographies, where the river is viewed as an active participant in the creation of place, rather than a passive backdrop to human activity.

Non-Human Agency and the Role of the Environment: Both deep mapping and more-than-human geographies emphasize the importance of non-human agency in shaping spatial and environmental dynamics. In more-than-human geographies, non-human entities – such as animals, plants, and ecosystems – are understood as having their own forms of agency that influence human experiences and behaviors. This perspective encourages scholars and practitioners to move away from human-centered models of place-making and recognize the active role that non-humans play in shaping the world.

Deep mapping provides a practical method for representing this non-human agency. By integrating multiple forms of data and experience, deep maps allow for the inclusion of non-human entities and environmental processes that shape the spatial experience. For example, a deep map of a forest could incorporate data about soil composition, rainfall patterns, plant growth cycles, and animal migration routes. These environmental factors are not seen as separate from human life but as integral to understanding the forest as a complex and dynamic space. This is a direct reflection of the more-than-human view that the environment is not simply a passive backdrop but an active participant in shaping space (Ingold, 2000).

The connection between deep mapping and more-than-human geographies has important implications for various fields, from environmental conservation to urban planning and cultural heritage. Deep mapping, when used in conjunction with more-than-human geographies, provides a holistic understanding of ecosystems. It allows conservationists to map not only human interactions with the environment but also the roles of non-human entities in maintaining ecological balance. This approach can inform conservation strategies that account for the needs of both human and non-human actors in preserving biodiversity.

In urban contexts, deep mapping can be used to represent the dynamic relationships between human residents, animals, plants, and the built environment. By acknowledging the agency of non-human entities, urban planners can create more sustainable, inclusive, and biodiverse cities. For example, deep mapping could help design urban spaces that accommodate both human and animal needs, such as creating wildlife corridors or green spaces that support biodiversity.

The combination of deep mapping and more-than-human geographies offers a richer understanding of cultural heritage sites. These maps can represent not only human history and cultural practices

but also the ways in which landscapes, animals, and ecological systems shape and are shaped by cultural narratives. This holistic approach can provide a more comprehensive understanding of cultural heritage, highlighting the interconnectedness of humans and non-humans in the creation of meaningful places.

CONCLUSION

The connection between deep mapping and more-than-human geographies offers an innovative approach to understanding space, place, and agency. By integrating multiple layers of knowledge and recognizing the agency of non-human entities, both frameworks challenge traditional, human-centered perspectives and open up new possibilities for mapping and understanding the world. Whether in the context of environmental conservation, urban planning, or cultural heritage, the combination of deep mapping and more-than-human geographies encourages a more inclusive, relational, and ecological understanding of place that reflects the interconnectedness of all actors—human and non-human—in shaping the spaces we inhabit.

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